PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in and relating to Shives for Casks and Kegs

We, SURE FORM PLASTICS LIMITED, a British Company, of Industrial Estate, Swindon, Wiltshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to shives for casks and kegs such as those used for the shortage of alcoholic beverages.

Many casks used in the brewing industry are sealed with a circular wooden shive driven had into an aperture in the body or an end of the cask after the latter is filled. The sealed casks are often subject to rough handling during delivery and it is, therefore, essential to ensure that the shive does not become dislodged allowing the contents to spill out. After the cask has been tapped to allow the contents to be drawn off, it is usual to inject CO_2 under pressure into the cask to ensure no air enters and thus preserve the remaining contents from deterioration. It is usual to inject CO_2 under pressure for purposes of drawing off supplies. The pressure inside the cask being higher than that of the atmosphere exerts outward thust on the shive tending to dislodge it. The shive itself, being made of wood, tends to dry-out and shrink thus further increasing the possibility of its accidental dislodgement from the cask, and also allow CO_2 to escape.

The present invention therefore seeks to overcome the above disadvantages of the ordinary wooden shive by providing a shive comprising a circular member made of plastics material and having a peripheral flange extending therefrom to engage the outer surface of a cask surrounding an aperture therein and a deformable portion having a ledge thereon encircling said member to engage the interior surface of the cask surrounding said aperture to provide a substantially air and liquid-tight seal for the cask and in which said circular member includes an upper portion having a recess therein to define a side wall from which said flange extends and a boss centrally disposed within said recess, said boss having a diaphragm therein which is constructed so as to allow it to be pierced and subsequently sealed by a tap or peg.

A preferred embodiment of the present invention is illustrated in the accompanying drawing which shows a plastics shive 1 having a circular member 2 which, for convenience of description, is considered to be divided into upper and lower portions 3 and 4 respectively, although in practice the two portions are an integrally moulded body.

The member 2 may be formed from any one of the following materials, polyphenoline oxide, polyvinyl acetals, polyamides, polyolefines, polyurethanes, and co-polymers of the above materials, also 4-methylpentene-1 and similar thermoplastics and plastics offering the physical characteristics for which this application calls.

The upper portion 3 is of frusto-conical shape having a circumferential wall 5 tapering towards the lower portion 4. A flange 6 extends from the wall 5 at that end thereof remote from the junction of the upper and lower portions, and a plurality of ribs 7 are formed extending radially inwards from the wall 5 to a boss 8 formed in the centre of the upper portion 3. Within the boss is a diaphragm 9 having a thickness such as to allow piercing thereof for the addition of fines when the shive is positioned in a cask or keg. The hole made in the diaphragm may be sealed by a peg or tap.

The ribs 7 are provided to stiffen the wall 5 to allow slight deformation thereof when the shive is inserted into an aperture since the latter may not be truly circular and it is im-

[*Price 4s. 6d.*]

portant to provide the best possible seal between the wall 5 and the wall of the aperture.

The lower portion 4 is cup-shaped having its base integral with that part of the upper portion 3 of similar diameter and has a wall 10 on which is formed at that end thereof remote from the upper portion 3, an outwardly extending ledge 11 substantially parallel to the lower surface of the flange 6. The inner surface of the wall 10 tapers outwardly from the central axis of the portion 4 to meet the outer surface thereof which tapers inwardly from the extremity of the ledge 11.

The thickness of the lower portion 4 is such as to provide resiliency thereof to allow it to be forced inwards by the ledge engaging with the wall of an aperture when the shive is driven therein.

The shive is forced into an aperture in a cask or keg so that the lower portion 4 is deformed inwardly to allow the upper portion 3 to enter the aperture. When the shive is driven fully home, the lower portion 4 snaps outwards as the ledge 11 becomes free of the wall of the aperture and tightly grips the inner surface of the cask surrounding the aperture, whilst the lower surface of the flange 6 is in intimate contact with the outer surface of the cask surrounding the aperture. Thus, the shive seals the aperture by the intimate contact of the lower surface of the flange 6 and the ledge 11 on the outer and inner surfaces of the cask surrounding the aperture respectively and by intimate contact of the wall 5 with the latter.

It will be appreciated that the distance between the lower surface of the flange 6 and the ledge 11 must be chosen to ensure a tight fit of the shive when the latter is inserted into a cask or keg.

Whilst only one preferred embodiment of the invention has been described, it will be appreciated that it may take other forms so long as the shape is such to provide sealing surfaces at the outer and inner faces of an aperture in a cask and preferably also a sealing surface between the wall of the aperture and a mating surface of the shive. Furthermore it is necessary that the shive be made of plastics material to provide the necessary resilience and stability.

WHAT WE CLAIM IS:—

1. A shive comprising a circular member made of plastics material and having a peripheral flange extending therefrom to engage the outer surface of a cask surrounding an aperture therein and a deformable portion having a ledge thereon encircling said member to engage the interior surface of the cask surrounding said aperture to provide a substantially air and liquid-tight seal for the cask and in which said circular member includes an upper portion having a recess therein to define a side wall from which said flange extends and a boss centrally disposed within said recess, said boss having a diaphragm therein which is constructed so as to allow it to be pierced and subsequently sealed by a tap or peg.

2. A shive as claimed in Claim 1 including a plurality of ribs extending from said side wall to said boss and formed integrally with said upper portion.

3. A shive as claimed in Claim 1 or Claim 2 in which said member includes a lower portion integral with the upper portion and having a frusto conically shaped recess therein to define a side wall from which said ledge extends.

4. A shive as claimed in Claim 3 in which the outer surface of the side wall of the upper portion is shaped to provide a mating surface with the wall of an aperture in a cask in which said shive is inserted.

5. A plastics shive substantially as hereinbefore described with reference to the accompanying drawing.

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1 SHEET *This drawing is a reproduction of the Original on a reduced scale*